

## LOW POWER CMOS NE555V TIMER

A new low power timer designated ICM7555 is a direct pin-for-pin replacement for the NE555V bipolar timer, but requires only around a hundredth of the supply current required by the NE555V. The CMOS device has extremely low trigger, threshold and reset currents — typically 20pA; a very wide supply voltage range from 2V to 18V and the reset does not crowbar the supply during output transitions. The device can operate from microseconds up to about a day. The output can drive at least two standard TTL and CMOS and all inputs and outputs are fully protected against static discharge and no special handling is required at all.

Supply decoupling is normally not required close to the IC unlike the NE555V, nor is the control voltage decoupling capacitor usually required as it is with the NE555V, thus there is a saving in external components. To keep the total power supply requirements low, choose high values for  $R_A$  and  $R_B$  and low values for  $C$  which should be a low leakage type and not ceramic.

### Specification:

#### Supply Voltage:

Minimum 2V, Maximum 18V

Supply Current: 80 $\mu$ A typical

#### Threshold Current:

10pA at  $V^+ = 5V$ , 50pA at  $V^+ = 18V$

Max Frequency in Astable Mode:

At least 500kHz

#### Trigger Current:

10pA at  $V^+ = 5V$ , 50pA at  $V^+ = 18V$

#### Reset Current:

20pA at  $V^+ = 5V$ , 100pA at  $V^+ = 18V$

Reset Voltage: +0.7V

Temperature Stability: 50ppm/ $^{\circ}$ C at 25 $^{\circ}$ C

#### Output Sink Current:

100mA max at  $V^+ = 18V$

In astable mode the frequency of operation is given by:

$$f = \frac{1.46}{(R_A + 2R_B)C} \text{ Hz}$$

Fig. 3 shows how to achieve duty cycles of 50% and less.

### PRICES HELD UNTIL NOVEMBER

With prices shooting up it will be good news to know that we are pegging our prices come what may (VAT changes excluded) until November 1979. Our newsletter will be available in mid-November — those on our mailing list will of course still receive six copies for their 30p. After November we shall be publishing every three months and our prices will be held for three month periods.

#### Special Offers

New Books

Boxes/Battery Holders

Letters

Complete Price List

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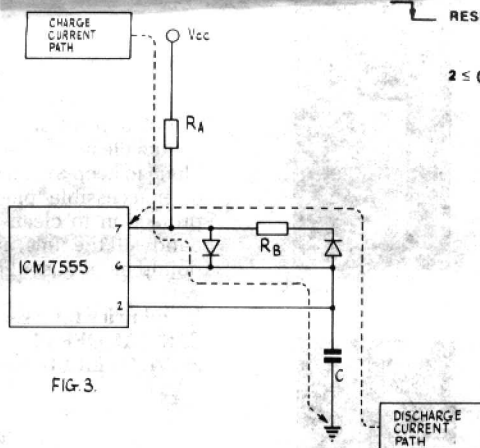
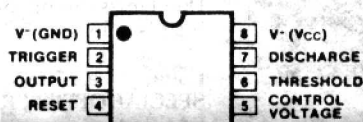
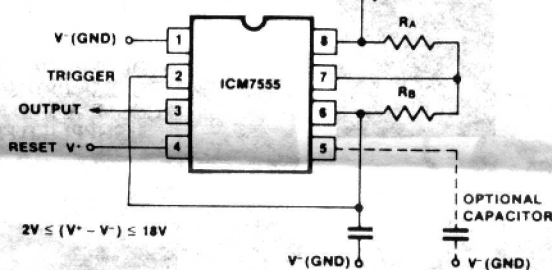


FIG. 3.



Astable Operation

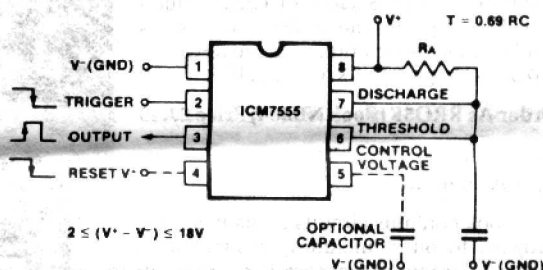
In a monostable mode the period time is given by:

$$t = 0.69RC \text{ Hz}$$

(In both equations R is in ohms and C is in Farads)

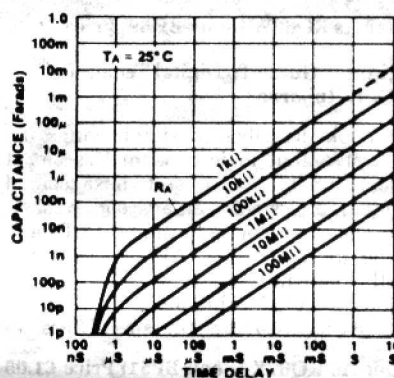
Order As YH63T (ICM7555)

Price £1.09

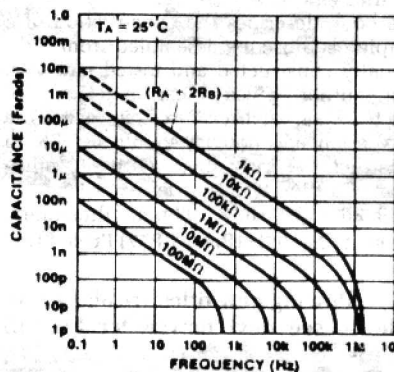


Monostable Operation

TIME DELAY IN THE MONOSTABLE MODE AS A FUNCTION OF  $R_A$  AND  $C$



FREE RUNNING FREQUENCY AS A FUNCTION OF  $R_A$ ,  $R_B$  AND  $C$



### CAPACITOR MARKINGS

Some of the capacitors we supply are marked using three digits and a letter. The three digits denote the value and the letter denotes the tolerance. The first two digits are the first two digits of the actual value and the third digit indicates the number of zeros that follow the value, and the value is in picoFarads. For example a capacitor marked 102 has a value of 10 plus two zeros, which is 1000pF. (1000pF = 0.001 $\mu$ F). The letter indicates the tolerance as follows: F =  $\pm$  1%, G =  $\pm$  2%, H =  $\pm$  2½%, J =  $\pm$  5%, K =  $\pm$  10%, M =  $\pm$  20%.

### THE SHOW OF THE YEAR

All of our projects will be on demonstration on our huge stand at the electronics hobby show of the year: Breadboard 1979. This year the show is at the Royal Horticultural Hall, near St. James' Park Underground Station, right in the middle of London. The dates to remember are Tuesday, 4th December to Saturday 8th December. We all hope you'll make a special effort to be there and we promise you won't regret it — it's going to be a tremendous show. For further details see our adverts and our November newsletter.

## AMENDMENTS TO LEAFLETS

### Drumsette

On schedule please amend numbers required of DIL Sockets 14 and 16-pin. You will require 5 DIL Socket 14-pin and 6 DIL Socket 16-pin.

### Train Controller

In the parts list and in the component schedule (MES46B) we have shown C2 as Axial 100 $\mu$ F 25V. It should be Axial 1000 $\mu$ F 25V. Also the transformer should be WB25C (Tr 12V 1A) and not Tr 34V 1A as stated in the parts list and component schedule. A revised wiring drawing is being sent out with the Train Control PCB (BY75S).

### 8W Amp Kit PCB

The 8W Amp PCB (BY73Q) has component designations printed on it. Please note that C3 should be inserted in the position marked C5 and vice versa, and R2 should be inserted in the position marked R3 and vice versa.

On boards marked BY73Q/2 these errors have been corrected.

### 40W Stereo Amplifier

The following parts used in this project are not shown in the catalogue.

XX30H (Equaliser Pot Core) Price £1.76  
XX31J (PCB Guides) Price 1 Price 19p  
XX32K (Headphone Skt Bkt) Price 52 $\frac{1}{2}$ p  
XY21X (Hi-Fi Amp Chassis) Price £16.93  
XY22Y (Hi-Fi Amp Screen) Price £1.37  
XY23A (Hi-Fi Amp Front Panel) Price £5.86  
XY24B (Hi-Fi Amp Cover Black) Price £4.69  
FL94C (Hi-Fi Amp Sel. Mthr. PCB) Price £2.82  
FL95D (Hi-Fi Amp Selector PCB) Price £2.29  
FL96E (Hi-Fi Amp Equ. Mthr. PCB) Price £2.25  
FL97F (Hi-Fi Amp Equaliser PCB) Price £1.82  
FL98G (Hi-Fi Amp Pk. Det. PCB) Price 90 $\frac{1}{2}$ p  
FL99H (Hi-Fi Amp PSU PCB) Price £1.65

### Touch-Sensitive Electronic Piano

The following amendments that should have been made to MES22 and MES22B prior to publication were regrettably omitted.

Top Octave Board  
R7 should be Min Res 6k $\Omega$   
Two Octave Boards  
R7 should be Min Res 6k $\Omega$   
Power Supply and Voice PCB  
R16 should be Min Res 47k  
R31 should be Min Res 1k  
R41 should be Min Res 100k  
R30 should be Min Res 47 $\Omega$   
C1 should be Polyester 0.047 $\mu$ F  
C2 should be Ceramic 2700pF (ignore '+' on circuit board)  
C21 should be Polyester 0.047 $\mu$ F  
Q1, 2 and 3 should be BC109C

In the pedals do not connect the two moving contacts together. Instead, connect each screen to its appropriate moving contact separately. Also insert an additional resistor R44, a Min Res 10k between the fixed contact on the sustain pedal (right-hand pedal) and the centre conductor of the screened cable (the wire connected to pin 8 on the pcb).

In Fig. 5, C4 is not required and the outputs from all the octave boards should be simply commoned and connected directly to the input of the Voice Board (pin 11). In Fig. 1, R41 is connected at its top end to R40, R42, C28 and the sustain line only. This point is not connected to the -13V rail as shown. It is connected correctly on the pcb.

It should be noted that the level pots on the octave boards should be set as low as possible for best results. The max output is then about 250mV rms, which should be adequate for most amplifiers.

On the pcb the + of C18 is marked at the wrong end. It should be connected the same way round as C19.

On the pcb the + of C11 is marked at the wrong end. It should be connected the same way round as C9. Also C16 is not marked. It fits in the holes beside R8 with its + lead connected to the pad closest to the edge of the board.

Fig 11 is incorrect; it is shown correctly above.

### Bass Guitar And Organ Pedal Unit

In the component list on leaflet MES 25 the following items have been omitted:

T2 Sub-Min Tr 6V		
D45-46 1N4002	Also required	
D47-53 LED Red	1 Mains Plug P429	1 Jack Skt Brk
R151-157 Min Res 270 $\Omega$	1 Mains Socket P646	1 Recess Plate

In addition C55 should be Axial 470 $\mu$ F 63V (not 40V).

ZD1 should be BZX6C12 (not 13).

LP1 Pan Neon is not required.

F51 should be mounted in a Chassis F/H 20mm.

The six Press Toe Switches Type 1 are SW2 to 7.

The Component Schedule (MES25B) lists all these parts correctly.

### 150W Amp Kit

We recommend making Q1, 2 and 3 either all ZTX541 or all ZTX542, changing Q5 to BF337 and R11 to Std Res 1k. Only two Heatsinks Clip-On will now be required. LW32K is now being supplied as standard with the parts listed above.

### 150W Stereo Disco

The following parts used in this project are not shown in this catalogue.

XY26D (Heatsink Mtg Plate) Price £2.65  
XY27E (Heatsink Cover) Price £4.75

## Letters to the Editor

### Harmony Vocaliser Kit

Dear Ed,

Your latest catalogue is really good value for money. It has become my main reference book.

Can you help me with these questions?

1. How practical would a "Harmony Vocaliser" KIT be? (and could Maplin produce it?)

2. What do  $V_{DD}$  and  $V_{SS}$  stand for?

3. Where can I find a substitution list for semiconductors commonly used in the American project books published by Foulsham-Tab?

4. Does a wire wound resistor have inductive reactance?

(Experienced constructors can go "Tut-Tut" here and pass on to the next letter.) Thanks for a good service.

Yours sincerely,  
A. Gaffney  
Scotland.

1. We have no plans to produce a kit of a harmony vocaliser, but doubtless one could be devised using the chorale effect from our string synthesiser to be released next year.

2.  $V_{DD}$  is the Supply Voltage applied to the Drain in MOS IC's and  $V_{SS}$  is the Supply Voltage applied to the Source, usually earth.

3. Most of the semiconductors are listed in Book BP14 (RH11M) including a list of Radio Shack equivalents on page 6. See our catalogue page 197.

4. The wire-wound resistors we sell do have inductive reactance, but it is possible to make non-inductive wire-wound resistors by winding half the wire required from left to right along the resistor body and the rest from right to left; you have to use enamelled wire of course. Each half of the winding now produces a magnetic field exactly in antiphase such that it is completely nullified.

### More Data — Less Colour

Dear Sir,

May I congratulate you on your new catalogue, with its vast range of widely divergent components. It must surely be invaluable to any electronics enthusiast!

However, I must confess to having reservations about your additional colour pages. While I suppose they are good advertisements for larger projects, I do think the space could have been used to better purpose.

In particular, I would prefer to see more information, formulae, etc. given about your extensive range of IC's for instance. I notice that data concerning the NE555V has been cut to a bare minimum, compared to that in the previous catalogue which I had found extremely useful. I am of the opinion that hard facts are rather more useful than colourful pictures.

With regard to new lines, I have found a better way of keeping my catalogue up to date. This I do by cutting out the relevant sections from your new-style (and much easier to handle!) newsletters and gluing the appropriate page.

Thanks, then, to all at Maplin for your excellent service. Although it has suffered from an inevitable surge of orders, I am sure it will soon be restored to its usual superlative swiftness.

Yours faithfully,  
T. J. Barker  
Reigate, Surrey

We are already working on our 1981/82 catalogue and we are hoping very much that we shall be able to keep our colour pages and include a lot more information on our IC's.

### Synthesiser For Sale

I have available for sale a fully tested and working 4600 Synthesiser. All enquiries please ring 0702 712966 after 6 p.m.

Name and address supplied.

## ADJUSTABLE ANGLE LAMPS

A high quality adjustable table lamp to get a bright light into all those awkward corners when you're using miniature components. The 7 inch diameter shade provides a wide area of illumination and takes a standard light bulb (not supplied) up to 60W. The tempered steel spring balanced arms move with a parallelogram motion and tension control knobs at the arm joints adjust and maintain the set position of the lamp. The shade is fully adjustable and the whole unit is finished in Californian White. The interior of the shade is coated with a special heat resistant enamel designed to ensure maximum reflection.

The lamp is supplied with a bracket which allows clamp fixing to a table edge or headboard or screw fixing to a bench or wall. A switch is provided on top of the shade and there is 2 metres of flex for direct connection to the mains.

Order As XY25C (Stay-Put Lamp)  
Price £10.90



### Audio Mixer

The Terry clip spacer previously sold only as part of mixer metalwork kit No. 1 is now available separately.

Order As LW03D (Spacer TC) Price 16p

### Car Ignition

In the new leaflet the circuit has been changed and therefore the pcb (BB75S) described on page 24 of the catalogue will not be suitable. Leaflet MES16 will give full details.

### Burglar Alarm

In the parts list for the ultrasonic detector and in the component schedule (MES47B) we have shown C9 as Axial 10 $\mu$ F 25V. It should be Ceramic 10pF. Also R16 is shown as Min Res 1k. It should be Min Res 2k2.

The Octal Ch Skt shown on the schedule is not required

Also R41 and R43 should be Min Res 1k8.

# Letters to the Editor

## "And The Eyes Of Them Both Were Opened, And They Knew That They Were Naked". Gen.3:7

Dear Sir,  
Whilst looking through your catalogue, I noticed an item which seemed to fall short of the high standard which I have come to expect from Maplin. This is the Picture Liquid cassette wheel entitled "Lovers". I find this to be very offensive, in the first place because it portrays an act which I feel should remain essentially private, certainly not to be displayed in such a public place as a disco. Secondly because of its possible destructive effect on the youngsters who attend discos, many of whom are only around the ages of 12 or 13. I feel that it is very important to avoid pressures of this kind on mere children. Certainly the visual impact of the picture could lead them to suppose that this sexual behaviour would be acceptable, regardless of age or feelings, and it presents an image which is totally devoid of any moral value. To a lesser extent, this argument also applies to the "Go-Go Dancers" wheel. Ideally, we would like to suggest that you withdraw these items from sale, but failing that, perhaps you would publish this letter and invite comment from other customers.

Yours sincerely,  
Clive & Ingrid Wagner  
Coventry.

The cassette wheels in question meet a high technical standard and are for

from being pornographic and therefore we feel they are perfectly acceptable to offer for sale. Dancing is a sensual form of enjoyment and discos, because of this, are highly sensual places, where pictures of this kind are not out of place. Children have to grow up in a world which by and large accepts the basic sexual nature of mankind. In my opinion it is up to the teachers and parents to show children the moral values and put these matters in perspective, then censorship of the kind you have put forward would not need to be considered.

## Very Upset Customer

Dear Sir,  
I would have liked to have written to you, praising your service, but unfortunately, I think you are the strangest firm I have had the misfortune to deal with. Let me explain.  
In either October or November Everyday Electronics, you included a prepaid invitation to purchase a catalogue, this I completed and returned. I received this excellent publication in mid February. I placed an order on 18th February for nearly £13 of equipment — OK, not an enormous order, but all helps to build a foundation. Two items on my order were your special offers SP25C and SP17T. Perhaps you will find it hard to believe that I am still awaiting the NE 555 timers.

Quite frankly I feel very badly let down, and the Maplin Promise is absolute rubbish and a downright rip off.  
All I can say is that on the 18th May, 3 months after placing my order, if I have not received the balance of my order, I shall return **post unpaid** the whole of the order and I shall demand my money be returned. I will also make my case known as widely as possible, i.e. to write to the publications which carry your advertisements. I think this action fair to protect other unsuspecting people.  
Just pull your fingers out.

J. N. Shelley  
Kendal, Cumbria  
P.S. Don't expect any further business from me.

The NE555 timers were promised to us by one of the biggest manufacturers of semiconductors in the world, for delivery in mid-January. Up until the end of April, they were still saying that delivery would be any day, then finally admitted the truth and said that to be honest, they couldn't be sure when we'd get them, but they said, "You are first in line for them on one of our lists" — it seems that government contracts get priority — if you see what we mean. We eventually managed to find an alternative supplier and cleared all our back orders at the end of May. It is now July, and we have still not received the timers promised for mid-January.

## Complainers Make Me Sick

Dear Sir,  
I have not been with you as a customer for long, although I did have my eye on your adverts for a long time, but never got round to ordering from you, due to having bought OTHER suppliers catalogues and being very put off by prices, or small order charges, etc., so when you offered your latest catalogue on approval in one or more of the mags that I buy every month, I took the gamble to try you, due to my being able to return the Catalogue if I was dissatisfied. I still have the catalogue, and although you often don't have every component I require, and your stocks have taken a "POUNDING" from "OLD" and "NEW" customers alike, I have up to you, no complaints, your prices are VERY competitive, your return service is very good, considering your estimated consumerage, and it makes me feel sick, when I read some of the letters of complaint, some people do not know how to be thankful, they have always got to complain about something, or they are not happy, so I hereby say, to ALL complainers, I'M SATISFIED, YOU MAY BE ALSO, IF YOU THINK ABOUT IT. GIVE MAPLIN A CHANCE TO GET THEIR SUPPLIES AND SUPPLIERS RIGHT THOUGH AND NOBODY WILL TOUCH THEM.  
Now, about that "T-shirt" slogan, as asked for in the May 1979 Maplin News.

## BACK ISSUES OF NEWSLETTERS

Copies of all previous issues of our newsletter since our current catalogue was issued are available. The reprints do not include the price list or letters pages or any item repeated in a later issue.  
The list below gives details of articles included, along with current prices of any new items shown in that newsletter.

### January 1979 Order As XF33L (Newsletter MES121) Price 15p

This newsletter carries details of the following:

Power Supply for one or two 8W Amp Kits  
Constant Current charger circuit for use with our quick charge nickel-cadmium cells.  
Keyboard Console — a black plastic case with slightly sloping aluminium front panel. Overall size 405 x 210 x 57/30mm.  
Order As XY15R (Verobox 503) Price £9.53  
NE 544 Servo Motor Driver application circuit.  
MM57160 Timer circuits and programming details.  
Stereo Mixer — schedule filled out to your requirements free.

### New Books as follows:

Radio Stations Guide  
by B. B. Babani & M. Jay  
Order As RQ58N (Book BP55) Price £1.55  
The Best Of Creative Computing Vol. 1  
Order As RQ60Q (Book Sybex R1)  
Price £7.70

The Best Of Creative Computing Vol. 2  
Order As RQ61R (Book Sybex R2)  
Price £7.70

The Best Of Byte  
Order As RQ62S (Book Sybex R3)  
Price £9.83

Questions And Answers Radio Repairs  
by Les Lawry-Johns  
Order As RQ59P (Book NB367) Price £1.60  
Artist And Computer  
Order As RQ63T (Book Sybex R5)  
Price £4.69

Some Common BASIC Programmes  
Order As RQ64U (Book Sybex P10)  
Price £6.99

### March 1979 Order As XF34M (Newsletter MES122) Price 15p

This newsletter carries details of the following:

### Dual-In-Line-Switches

DIL Switch SPST Dual	Order As XX26D	Price 62½p
DIL Switch SPST Octal	Order As XX27E	Price £1.90
DIL Switch SPDT Single	Order As XX28F	Price 62½p
DIL Switch SPDT Quad	Order As XX29G	Price £1.90

### 0.1in Matrix Breadboard

Breadboard 217L	Order As XX18U	Price £3.31
Breadboard 234L	Order As XX19V	Price £5.92
Breadboard 248L	Order As XX20W	Price £6.93
Breadboard 264L	Order As XX21X	Price £8.72
Breadboard 206R	Order As XX22Y	Price £1.39
Breadboard 209R	Order As XX23A	Price £1.56
Breadboard 212R	Order As XX24B	Price £1.75
Breadboard SS-2	Order As XX25C	Price £11.59
7109 A/D Converter	Order As YH59P	Price £14.70
CA3080E Transconductance Op-amp	Order As YH58N	Price 88½p

### Flexible Laminate Panels

Laminate Japan Teak	Order As XY17T	Price £3.71
Laminate Penang Walnut	Order As XY18U	Price £3.71
Laminate Alumin. Sml.	Order As XY19V	Price £1.59
Laminate Alumin. Lrg.	Order As XY20W	Price £2.11

Modification to 100W Stereo Disco to stop power amps exceeding 100W and overheating.

### May 1979 Order As XF35Q (Newsletter MES123) Price 15p

This newsletter carries details of the following:

Teak Cabinet for Piano Project	Order As XY11M	Price £61.23
Remote Control Dimmer	Order As XX35Q	Price £22.21
Dimmer Control Box	Order As XX36P	Price £9.05

Square LED Green Order As YH60Q	Price 51p
Square LED Yellow Order As YH61R	Price 51p
Square LED Clip Order As YH62S	Price 6½p
Automatic Car Cassette Carrier Order As LY06G	Price £3.48
Universal Headshell Order As XX34M	Price £3.66
PP3 Battery Holder Order As XX33L	Price 75p
Verobox 303 Order As LH50E	Price 88½p
Verobox 305 Order As LH51F	Price £1.66

### New Books as follows:

Basic Basic by James S. Coan  
Order As RL45Y (Book HD106) Price £5.90  
Designing A Microprocessor System (cassette course) by Rodney Zaks  
Order As RQ65V (Course S3) Price £22.30  
Projects In Radio And Electronics by I. R. Sinclair  
Order As RL36P (Book NB345) Price £2.64  
Electronic Projects In Audio by R. A. Penfold  
Order As RL40T (Book NB338) Price £2.45  
Electronic Projects In Hobbies by F. G. Rayer  
Order As RL41U (Book NB354) Price £2.45  
Electronic Security Devices by R. A. Penfold  
Order As RL43W (Book BP56) Price £1.55  
Z80 Instruction Handbook by Nat Wadsworth  
Order As RL39N (Book Sybex L8)  
Price £3.50

Game Playing With Basic by D. D. Spencer  
Order As RL47B (Book HD109) Price £4.60

Electronic Projects In The Home by Owen Bishop  
Order As RL42V (Book NB346) Price £2.45  
50 Circuits Using 7400 Series IC's by R. N. Soar  
Order As RL44X (Book BP58) Price £1.45  
How To Build A Computer-Controlled Robot by T. Loofburrow  
Order As RL46A (Book HD681) Price £5.25  
The Mind Appliance: Home Computer Applications by T. G. Lewis  
Order As RL48C (Book HD112) Price £4.55  
CBER's Wordbook  
Order As RL49D (Book HD765) Price £2.50  
8080 Galaxy Game by R. Edwards  
Order As RL37S (Book Sybex L9) Price £5.40



# Letters to the Editor

Not too cheeky, but I suppose if your mind works on it at any length, it could be taken that way, mine did... so how about this?

"MAPLIN ELECTRONIC SUPPLIES — FOR A BIT AT THE RIGHT PRICE". And don't let the 'print' wash out. Sincerely yours with best wishes, B. Phillips  
Wolverhampton

It was very kind of you to write to us and we do try very hard to live up to your expectations. Sadly, there is no doubt that some customers have had bad service from us and their complaints are justified. There certainly has never been any deliberate bad service or bad service through lack of trying or caring, but bad service is bad service whatever the cause and those who receive it have a right to have their voices heard. Nevertheless it's nice to know that there are people who understand our problems.

## Nice Prices, Shame About The Binding

Dear Sir,  
I would like to congratulate you on your speedy delivery of components. The only complaint I can find, is the flimsy paper you use in your catalogue, the middle and back pages fell out of mine on arrival. Apart from this complaint, I think your service is very good. When I compared the price of components from the local electronic shop

with your prices, I had a shock. I was expecting their prices to be cheaper because I wouldn't have to pay postage, but I was wrong, their prices were about 1½ times more expensive than yours. Finally, I have thought of a phrase for your teeshirt:  
"I'm a live wire, my equipment comes from Maplin."

Yours faithfully,  
D. Bolt  
Poole, Dorset

Unfortunately, the price of paper is rocketing upwards and finding the right paper for our catalogue is a major consideration. We would have liked to print it on a better quality paper, but would all our regular customers have paid the extra?

## Strange Fault On Synth

Dear Sir,  
I am mystified by an intermittent fault on two oscillators from the 4600 synth. It sometimes appears when power is applied after a period of rest, sometimes after the range or waveform selector switch is rotated and occasionally during playing. This fault condition causes the voltage/frequency relationship to become non-linear and it remains after power is removed then re-applied, but can be cleared by momentarily earthing C4 at the range selector end.

It doesn't look like a dry joint, I've changed IC3, 4 and 6, spent many hours with a scope and meter, so am keen to hear from anyone with similar troubles.  
Phone: Medway 45500.

S. Marks  
29 Weston Road,  
Rochester,  
Kent.

Yours faithfully  
S. Marks

P.S. I have no objections to phone and address being printed.

We must admit to being mystified by this fault also, but it seems likely it lies around IC5 and IC6.

## How To Get Brian May's Guitar Sound

Dear Sir,  
In your March newsletter, S. P. Lewis asked if you could design a fuzz box for a guitar which would make his guitar sound like Brian May, etc. I have found that the nearest thing to this sound is achieved using a compressor and then using an ordinary fuzz box. The compressor keeps the volume level constant, and increases the sustain, whilst the fuzz box adds that extra "crunch" to the sound as you play. If, like me, you are unable to afford a ready-built compressor, a suitable circuit and details on how to build it are included in Craig Anderton's book

"Electronic Projects For Musicians", which uses a dual op-amp (14-pin D.I.L. 4739) and an optoisolator, as well as a minimal number of discrete components. Thanks for the excellent service.

Yours

Stephen F. Archbold  
Whitely Bay, Tyne & Wear

## Excellent Service Marred

Dear Sir,  
I am new to using your mail order service, and was beginning to think it was excellent. This thought, however, has been marred by the mis-handling of my last order, including 1 vero-box. Due to a mis-read order code (LL05F read for LQ05F) I was sent the wrong box. This was duly returned and cost 44p in postage. The catalogue instructions seem very vague in connection with returned goods and it is rather disappointing not to receive a note of apology or a refund of postage when the correct order was returned.

Yours sincerely,  
D. Johnson  
Pudsey, W. Yorks.

We have suffered from a spate of mis-read codes recently and have now changed our collecting system slightly to try to overcome the problem. We are sorry that Mr. Johnson did not receive a refund of his postage, he should have done so and we have now sent him a refund.

## All prices shown in this list are valid PRICE LIST from July 23rd 1979 to November 9th 1979

Prices shown in this list include VAT at 15% where applicable. Items marked NV are rated at 0% and the price shown applies both to inland and export orders. Overseas customers should add up the total cost of all items except those marked NV and deduct 13% to arrive at the total price excluding VAT. Alternatively multiplying the total price (except NV items) by 0.87 will give the total price excluding VAT.

Although postage charges to customers living in the Republic of Ireland and in the UK, but not on the UK mainland, are the same as to mainland addresses we regret that we must levy an additional charge of £5 on each order containing any items marked "Delivery by Carrier".

Will customers from the Republic of Ireland please add 25p and then 10% to the cost of their order now that the Irish pound is not equivalent to sterling, to cover the rate difference and negotiation fees. We will refund any difference; please state cheque or credit note.

All prices are for the unit quantity shown in the catalogue (unless shown otherwise on this list) i.e. each, per pack, per metre etc. All prices include postage and packing. There is a 20p handling charge which must be paid on all orders having a total value of under £2.00.

The price list is intended for use with our 1979/80 catalogue and applies to all mail orders. Prices in our shop are generally lower on heavy items as mail order prices include postage and packing costs. Our valuable discount voucher scheme continues both on mail orders and in our shop.

Copies of manufacturers' data sheets are available for most IC's — price 25p each.

### Notes:

† While stocks last NYA Not yet available

★ Item is mentioned in "Errors In 1979/80 Catalogue" elsewhere in this newsletter.

NV Indicates that item is zero rated for VAT purposes.

## Prices charged will be those ruling on the day of despatch.

1979/80 Catalogue Page No.	VAT inclusive PRICE
<b>Page 10</b>	
BR45Y AS 341s	33p
BR88V Mk/Space Adptr Kit	£3.45
BB00A Divider Board 'A'	£2.38
BB01B Divider Board 'B'	£2.30
BB02C Tone Board 'A'	£2.39
BB03D Tone Board 'B'	£1.84
BB07H Control Board 'A'	£3.35
BB08J Control Board 'B'	£1.52
BB09K Sawtooth Board 'A'	£2.85
BB10L Sawtooth Board 'B'	£3.32
BB77J Divider MO & Freq Gen	NYA
BB78K Pedal PCB B	NYA
BB79L 32-Note Pedal Voice	NYA
BB80B Pedal Diode PCB	NYA
HQ72P Auto Organ	
Gen/Clock PCB	£1.48
HQ73Q Auto Organ	
Chord Coder PCB	£2.07
HQ74R Auto Organ	
Auto Stop PCB	£2.99
HQ75S Auto Organ	
Pre-Amp PSU PCB	£3.38
BB11M Gate Board	38p
BB04E Tone Board 'C'	£3.22
BB05F Tone Board 'D'	£3.17
BB06G Tone Board 'E'	£3.05
BB12N Pedal PCB 'A'	£2.04
BB15R Mother Board 'A'	£8.16
BB13P A/B Switch Board	95p
BB14Q MES Amp Bd 'A'	37p
XH00A MES51	15p NV
XH02C MES52	15p NV
XH04E MES53	35p NV
XH31J MES54	30p NV
XH33L MES55	30p NV

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XF00A 4600 Synthesiser Book	Out of print
BB39N Synth Keyboard	
Controller PCB	£4.54
BB42V Synth Noise Controller	
PCB	£1.70
BB46A Synth VCF PCB	£1.50
BB57M Synth Noise Controller	
Bkt	67p
BB61R Synth VCF Mtg Bkt	62p

1979/80 Catalogue Page No.	VAT inclusive PRICE
BB62S Synth Outpt Sige Bkt	£1.10
<b>Page 14</b>	
HY14Q String Ensemble 1 PCB	£2.97
HY15R String Ensemble 2 PCB	£2.90
HY22Y String Ensemble 3 PCB	£2.09
HY23A String Ensemble 4 PCB	£2.62
XH17T Leaflet MES 14	Free
XB78K 4600 Front Panel	£10.44
Carriage in UK only	£2.66
XB08J Synth Rear Panel	£1.55
XF10L ETI Top Project No. 5	£1.25 NV
BB76H Touch Organ PCB	£5.06
XB79L 4600 Cabinet	£51.58
Carriage in UK only	£5.32
<b>Page 15</b>	
XH18U Leaflet MES 22	25p NV
BY78K Piano PSU/Voice PCB	£2.08
BY79L Piano Top Oct PCB	£3.95
BY80B Piano Two-Oct PCB	£4.85
XQ06G Piano Cabinet Black	£50.75
XY11M Piano Cabinet Teak	£61.23
XF03D Radio Control Book	£1.20
BB29B RC Coder PCB	£1.28
BB29G RC Xmitter PCB	£1.33
BB30H RC Receiver PCB	£1.24
BB31J RC Interface PCB	80p
BB32K RC Decoder PCB	£1.20
BB33L RC Relay Drive PCB	69p
BB34M RC Servo Drive PCB	76p
BB35Q RC Servo Amp PCB	69p
BB36P RC Tone Gen PCB	69p
BB37S RC Tone Decoder PCB	69p

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XH21X Leaflet MES37	25p NV
XQ03D 10-Channel G.E. PCB	£1.70
XB74R 10-Chl Egltr Mtwrk	£9.19
XB75S 10-Chl Egltr Wvkr	£5.01
XH07H Leaflet MES32	20p NV
BB55K Dyn Noise Ftr PCB	£1.53
XB05F Dyn Noise Ftr Mvkr	£8.63

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XH22Y Leaflet MES38	40p NV
LW00A Mixer Mtlwkr Kit No. 1	£20.77

1979/80 Catalogue Page No.	VAT inclusive PRICE
LW06G Mixer Mtlwkr Kit No. 2	£6.90
LW10L Mixer Metalwork Kit	
No. 3	£9.31
LR18U Mic Mod Front Panel	£1.35
LR11M Mono GP Front Panel	£1.35
LR12N Stereo GP Front Panel	£1.35
LR17T Car/Hi-Z Front Panel	£1.35
LR39N Mixer Bus Mtg Plate	51p
LR32K Mixer Bus Securer	35p
LR43W Mixer Module Chassis	£3.17
LR38R Mixer Amp Mtg Plate	46p
LR19V Main Mix Front Panel	£1.45
Mix Pot Bkt	35p
LR29G Mix Pot Bkt	35p
LR10L Group Mix Front Panel	£1.00
LR37S Mixer I/P Mtg Plate	£1.19p
LR31J Pan Bd Bkt	35p
LR30H Mixer Mic Tr Bkt	29p
LR09K Mixer Blank Panel	£1.00
LR20W Mixer Blank Underpan	47p
LR40T Mixer Module Tab	21p
I/P Jack Identification	
Tab	21p
LR13P HQ Mixer PCB No. 2	£1.96
LR14Q HQ Mixer PCB No. 3	88p
LR15R HQ Mixer PCB No. 4	88p
LR34M HQ Mixer PCB No. 24	£1.49
LR16S HQ Mixer PCB No. 5	77p
LR35Q HQ Mixer PCB No. 25	£1.33
LR21X HQ Mixer PCB No. 6	88p
LR28F HQ Mixer PCB No. 18	46p
LR33L HQ Mixer PCB No. 23	90p
LR36P HQ Mixer PCB No. 26	£3.32
LR41U HQ Mixer PCB No. 27	£3.99
LR22Y HQ Mixer PCB No. 7	£1.50
LR23A HQ Mixer PCB No. 8	£1.20
LR24B HQ Mixer PCB No. 9	£1.27
LR42V HQ Mixer PCB No. 29	£1.80
LR25C HQ Mixer PCB No. 10	£1.50
LR26J HQ Mixer PCB No. 14	£1.45
LR27E HQ Mixer PCB No. 15	£1.47

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XH23A Leaflet MES42	25p NV
XB37S Sound To Light Case	£7.20

<b>Page 22</b>	
BB72P Sine/Square Gen	
PCB	£2.27
BB73Q Audio Osc Front Panel	£1.74

1979/80 Catalogue Page No.	VAT inclusive PRICE
XH24B Leaflet MES 15	15p NV
XH25C Leaflet MES 17	15p NV
BB74R Car PSU PCB	£1.05
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XH26D Leaflet MES 71	30p NV
BB82D Keyboard PCB	NYA
BB83E VDU Mother Board	NYA
BB84F UART PCB	NYA
BB85G Control PROM PCB	NYA
BB86T Clear Logic PCB	NYA
BB87U RAM Board	NYA
BB88V VDU Control Board	NYA
BB89W Latch PCB	NYA
BB90X Character Gen PCB	NYA
BB91Y Graphics Gen PCB	NYA
BB92A Output Timing PCB	NYA
BB93B Address Switching	NYA
PCB	NYA
BB94C VDU Interface PCB	NYA
BB95D Cassette/Modem	NYA
PCB	NYA
BB96E 3-Page Extn Mem	NYA
PCB	NYA
BB97F 4-Page Control PCB	NYA
BB98G VDU PSU PCB	NYA
BB99H VDU Mixer PCB	NYA
XY12N VDU Front Panel	NYA
<b>Page 24</b>	
XH27E Leaflet MES 16	15p NV
BB75S Car Ignition PCB	£1.12
XF04E Leaflet MES 41	40p NV
BB98I Disco Pre-Amp & Tone	
PCB	£1.81
BB19V Disco PSU PCB	£1.27
BB20W 100W Amp Board	£1.55
BB26D Motor Switch PCB	73p
BB27E Light Mod Bd	£3.35
BB22Y FET-Ceramic PU Bd	98p
BB24B Disco Fader Bd	£1.37
BB25C VUM & HP Amp Bd	2.38
BB18U Heatsink DR2	60p
XB76H Disco Front Panel	£11.50
XB77J Disco Cabinet	£42.00
Carriage in UK only	£7.00
XX00A IB Meta Det PCB	£1.27
XH20W Leaflet MES 25	15p NV
Orgn/Glar Bass PCB	£5.27